

IN THE CLAIMS:

Please **AMEND** claims 1, 3-5, and 9-21 as follows.

1. (Currently Amended) A method, ~~comprising: of traffic and resource control in a wireless communication device comprising a plurality of operation modes, the method comprising:~~

assembling data units of at least one incoming data stream into an output data stream, wherein the data units are destined for at least one destination node, and ~~each destination node the output stream~~ comprises a service level requirement for each of the at least one destination node;

selecting, in response to the assembling, a first set of physical radio transmission resources for the output data stream, wherein the first set of physical radio transmission resources is selected from physical radio transmission resources of one of a plurality of wireless connectivity technologies and belongs to physical radio transmission resources available in the a wireless communication device, wherein the wireless communication device is provided with the plurality of wireless connectivity technologies;

searching for a path that leads from the wireless communication device to one of the at least one destination node and fulfills the service level requirement corresponding to that destination node when one leg of the path is implemented by the first set of physical radio transmission resources, wherein the searching is performed with respect to each of the at least one destination node; and

scheduling a transmission of the output data stream when the path is found for each of the at least one destination node, wherein the scheduling presumes that the transmission is to occur through the first set of physical radio transmission resources.

2. (Previously Presented) A method according to claim 1, further comprising:

determining a path comprising a highest service level of all paths leading to a destination node, wherein the determining is performed for a destination node to which no path fulfilling the corresponding service level requirement is found.

3. (Currently Amended) A method according to claim 2, further comprising:

configuring the first set of physical radio transmission resources;

testing whether the determined path comprising the highest service level fulfills the service level requirement for the at least one destination node in response to the configuring; and

scheduling a transmission of the output data stream when the determined path fulfills the service level requirement for the at least one destination node, wherein the scheduling presumes that the transmission is to occur through the first set of physical radio transmission resources,

wherein the configuring is performed when no path fulfilling the respective service level requirement is found for the at least one destination node in the searching.

4. (Currently Amended) A method according to claim 1, further comprising:

choosing a second set of radio transmission resources for the output data stream;

re-searching, in response to the choosing, for a path that leads from the wireless communication device to one of the at least one destination node and fulfills the service level requirement corresponding to that destination node when one leg of the path is implemented by the second set of physical radio transmission resources, wherein the searching is performed with respect to each of the at least one destination node; and

scheduling a transmission of the output data stream when the path is found for each of the at least one destination node in the re-searching, wherein the scheduling presumes that the transmission is to occur through the second set of physical radio transmission resources.

5. (Currently Amended) A method according to claim 4, further comprising:

configuring the physical radio transmission resources available in the wireless communication device.

6. (Previously Presented) A method according to claim 4, further comprising:

rearranging the data units in the output data stream.

7. (Previously Presented) A method according to claim 1, wherein the searching comprises finding all paths leading from the wireless communication device to the at least one destination node.

8. (Previously Presented) A method according to claim 7, wherein the searching further comprises performing the finding in another network element.

9. (Currently Amended) A method according to claim 19, wherein the controlling comprises changing, prior to the transmission of the output data stream, the ~~operation mode~~ wireless connectivity technology that is in an active state, ~~of the wireless communication device prior to the transmission of the output data stream~~.

10. (Currently Amended) A method according to claim 1, wherein the selecting comprises utilizing information about a current state of the physical radio transmission resources available in the wireless communication device.

11. (Currently Amended) A method according to claim 19, wherein the other ~~operation modes~~ wireless connectivity technologies comprise a plurality of operation states[[]] and the controlling comprises synchronizing the plurality of operation states for maintaining the service level requirement of each destination node during the transmission.

12. (Currently Amended) A system, ~~comprising: for traffic and resource control in a wireless communication device comprising a plurality of operation modes, the system comprising:~~

~~traffic assembly means~~assembler configured to assemble data units for at least one
~~for assembling incoming data stream unit streams into an output data stream, wherein the~~
data units ~~of the output stream~~ are destined for at least one destination node, and the output
stream comprises a service level requirement for each of the at least one destination node;

~~resource selection means~~selector, responsive to the traffic assembly means assembler,
~~for selecting~~configured to select a first set of physical radio transmission resources for the
output data stream, wherein the first set of physical radio transmission resources is selected
from physical radio transmission resources of one of a plurality of wireless connectivity
technologies and belongs to physical radio transmission resources currently available in the
a wireless communication device, the wireless communication device being provided with
the plurality of wireless connectivity technologies;

~~routing means for searching~~router configured to search for a path that leads to one of
the at least one destination node and fulfills the service level requirement corresponding to
that destination node when one leg of the path is implemented by the first set of physical
radio transmission resources, wherein the ~~routing means for searching~~router is further for
~~the path are~~ configured to search for the path for each of the at least one destination node;
and

~~traffic scheduling means~~scheduler configured to schedule ~~for scheduling a~~
transmission of the output data stream when the path is found for each of the at least one
destination node, wherein the transmission is scheduled to occur through the first set of
physical radio transmission resources.

13. (Currently Amended) A system according to claim 20, wherein the traffic ~~assembly means~~assembler, the resource ~~selection means~~selector, the traffic ~~scheduling means~~scheduler, and the ~~control means~~controller reside in a single wireless communication device.

14. (Currently Amended) A system according to claim 20, wherein the other wireless connectivity technologies ~~operation modes~~ comprise a plurality of operation states; and the ~~control means~~controller is further for synchronizing the plurality of operation states to maintain the service level requirement of each destination node during the transmission.

15. (Currently Amended) ~~An apparatus, comprising: wireless communication device comprising a plurality of operation modes, the wireless communication device comprising:~~

a traffic ~~assembly unit~~assembler configured to assemble data units of at least one incoming data stream ~~unit streams~~ into at least one an output data stream, wherein the data units are destined for at least one destination node, and ~~each the~~ output data stream comprises a service level requirement for each of the at least one destination node;

a resource selector ~~selection unit~~ responsive to the traffic assembly ~~unit~~ and configured to select a first set of physical radio transmission resources for the output data stream, wherein the first set of physical radio transmission resources is selected from physical radio transmission resources of one of a plurality of wireless connectivity

technologies and belongs to physical radio transmission resources currently available in the wireless communication deviceapparatus;

a path detector ~~detection unit~~, configured to detect whether a path leading to a destination node and fulfilling the corresponding service level requirement is available for each of the at least one destination node, wherein one leg of the path is implemented by the first set of transmission resources and wherein the path detector is operably connected to a routing entity configured to search for paths leading from the apparatus to the at least one destination node; and

a traffic scheduler ~~scheduling unit~~, responsive to the path detector ~~detection unit~~, configured to schedule a transmission of the output data stream, wherein the traffic ~~scheduling unit~~ scheduler is configured to schedule the transmission to occur through the first set of physical radio transmission resources.

16. (Currently Amended) An apparatus ~~wireless communication device~~ according to claim 15, wherein the path ~~detection unit~~ detector comprises an interface for a the routing entity, wherein the routing entity resides ~~residing outside the apparatus and wireless communication device, wherein~~ the interface is configured to receive the information about paths leading from the ~~wireless communication device~~ apparatus to the at least one destination node.

17. (Currently Amended) ~~An apparatus wireless communication device~~ according to claim 15, wherein the ~~path detection unit~~apparatus comprises the routing entity, the routing entity being a routing unit configured to search all paths leading from the ~~wireless communication device~~apparatus to the destination node.

18. (Currently Amended) The ~~apparatus wireless communication device~~ according to claim 21, wherein the other wireless connectivity technologies ~~operation modes~~ comprise a plurality of operation states; and the ~~control unit~~controller is further configured to synchronize the plurality of operation states to maintain the service level requirement of each destination node during the transmission.

19. (Currently Amended) A method according to claim 1, further comprising:
controlling the plurality of connectivity technologies ~~operation modes~~ of the wireless communication device so that a connectivity technology ~~an operation mode~~ corresponding to the first set of physical radio transmission resources is in an active state when the transmission is scheduled to occur and the wireless communication device is with respect to its other wireless connectivity technologies ~~operation modes~~ in a state where the service level requirement of each destination node is maintained during the transmission.

20. (Currently Amended) A system according to claim 12, further comprising:

~~control means~~ a controller configured to control ~~for controlling~~ the plurality of wireless connectivity technologies operation modes of the wireless communication device so that a wireless connectivity technology an operation mode corresponding to the first set of physical radio transmission resources is in an active state when the transmission is scheduled to occur and that the wireless communication device is with respect to its other wireless connectivity technologies operation modes in a state where the service level requirement of each destination node is maintained during the transmission.

21. (Currently Amended) An apparatus ~~wireless communication device~~ according to claim 15, further comprising:

a ~~control unit~~ controller configured to control the plurality of wireless connectivity technologies operation modes so that a wireless connectivity technology an operation mode corresponding to the first set of physical radio transmission resources is in an active state when the transmission is scheduled to occur and that the apparatus ~~wireless communication device~~ is with respect to its other wireless connectivity technologies operation modes in a state where the service level requirement of each destination node is maintained during the transmission.